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Attorney Docket: 381AS/44307C2  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: TOSHIMICHI MINOWA ET AL.

Serial No.: 09/820,533 Group Art Unit: 3661

Filed: MARCH 30, 2001 Examiner: D. TRAN

Title: AUTOMOTIVE CONTROL APPARATUS AND METHOD

REPLY

Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Office Action mailed on or about November 19, 2002, applicants provisionally elect with traverse Claims 17 and 30-32. Reconsideration is requested for the following reasons which set forth good cause for an examination of all the claims originally presented.

The characterization at page 2 of the Office Action concerning what the four groups of claims ostensibly cover is both inaccurate and insufficient to satisfy MPEP §§ 806.04 and 808.01. All of the claims relate to a vehicle speed controlling method or apparatus in which the vehicle may be operated selectively in a first running mode or a second running mode. The first running mode is a normal drive mode wherein a vehicle is controlled in accordance with the magnitude of the accelerator pedal depression by a driver. The second mode is an automatic drive mode such as a cruise control (a constant vehicle speed control) or a constant headway distance control. The first target value of the

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first running mode is determined on the basis of a depressed accelerator pedal stroke. The second target value of the second running mode is determined from environmental operating conditions ahead of the running vehicle. In either mode, the vehicle speed is controlled to a desired value. The vehicle speed may be controlled by any one or more ways including controlling vehicle acceleration/deceleration rate, controlling drive-shaft torque, and controlling engine torque. The only difference among the claims is a parameter to be directly controlled for controlling the vehicle speed. Claim 30 (IV) defines the control parameter to be a vehicle driving force. Claims 18 and 24 (I) define the control parameter as vehicle acceleration/deceleration rate. Claims 20 and 26 (II) define the control parameter to be the drive-shaft torque. Claims 22 and 28 (III) define the control parameter to be the engine torque.

The subject matter of Groups I, II, III and IV provide a way of realizing vehicle speed control in two modes by using different control parameters.

The claims of Groups I, II, III and IV define an invention in which, during a transient state of the vehicle when the first running mode (normal drive mode) is changed to the second running mode (automatic drive mode), the vehicle or engine is controlled according to the third target value ( $T_{tar}$ ) to avoid a heavy shock to the vehicle due to a sharp change of the target value. the third target value is gradually varied from the first target value to the second target value during a transient period  $T_s$  as shown in Fig. 3.

Consequently, an early action on the merits of all the claims is earnestly solicited.

If there are any questions regarding this reply or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #381AS/44307C2).

Respectfully submitted,

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